

Application Serial No. 09/641,636

**IN THE CLAIMS**

1 Claim1 (currently amended): Apparatus for use in a wireless communications  
2 mobile unit comprising:

3 a ~~generator-formatter~~ for ~~generating-formatting~~ a control channel including a  
4 prescribed control channel resource having one or more time slots, said control channel  
5 being dedicated exclusively to a particular mobile unit and having a prescribed portion of  
6 said control channel resource reserved to transport uplink traffic channel requests,  
7 wherein each mobile unit has a distinct control channel and contention is eliminated on  
8 said uplink; and

9 a transmitter for transmitting said uplink traffic channel requests in said  
10 prescribed portion of said control channel resource to a base station;

11 a receiver to receive a response including an uplink channel assignment from said  
12 base station; and

13 a controller associated with said transmitter to control said transmitting to  
14 periodically repeating transmission of said uplink traffic channel request in prescribed  
15 one or more of said one or more time slots prior to said particular mobile unit receiving a  
16 response from said base station.

17 wherein said particular mobile unit and said base station a priori know the  
18 location of said prescribed portion of said control channel resource in said control  
19 channel,

20 ~~whereby a~~ wherein there is no need to include control header information that  
21 indicates at least a structure of said control message with said uplink traffic channel  
22 requests is eliminated and latency is minimized in transmitting said uplink traffic channel  
23 requests.

1 Claim 2 (original): The apparatus as defined in claim 1 wherein said wireless  
2 communications mobile unit is for use in an orthogonal frequency division multiplex  
3 multiple access wireless communication system.

Claims 3 and 4 (cancel).

## Application Serial No. 09/641,636

1 Claim 5 (original): The apparatus as defined in claim 1 wherein said prescribed  
2 portion of said control channel resource includes a plurality of time slots, each of said  
3 time slots including a set of contiguous bit positions.

**Claim 6 (cancel).**

1 Claim 7 (original): The apparatus as defined in claim 1 wherein said prescribed  
2 portion of said control channel resource includes at least one time slot.

1 Claim 8 (original): The apparatus as defined in claim 7 wherein said uplink traffic  
2 channel request includes a request for a traffic channel in terms of a rate of transmission  
3 of data.

1 Claim 9 (original): The apparatus as defined in claim 7 wherein said uplink traffic  
2 channel request includes a request for a traffic channel in terms of a number of frames  
3 required for the transmission of data.

1 Claim 10 (original): The apparatus as defined in claim 7 wherein said uplink  
2 traffic channel request includes priority information regarding said mobile unit.

1 Claim 11 (currently amended): The apparatus as defined in claim 5 wherein said  
2 controller controls said transmitter is controlled to transmit a single uplink traffic channel  
3 request utilizing a prescribed group of said plurality of time slots.

1 Claim 12 (currently amended): Apparatus for use in a wireless communications  
2 base station comprising:

3 a receiver for monitoring at least one prescribed portion of a control channel  
4 resource of an incoming control channel to detect an incoming uplink traffic channel  
5 request from at least one mobile unit to which said at least one prescribed portion of said  
6 control channel resource is exclusively dedicated, said traffic channel request being  
7 periodically repeatedly transmitted by said at least one mobile unit;

8 a detector for determining whether any uplink traffic channel requests have been  
9 received and, when an uplink traffic channel request has been detected, assigning a traffic  
10 channel to said at least one requesting mobile unit; and

11 a transmitter responsive to a determination that at least one request has been  
12 received for transmitting a request response message including said traffic channel  
13 assignment to said at least one requesting mobile unit;

Application Serial No. 09/641,636

14 wherein said at least one mobile unit and said base station a priori know the  
15 location of said prescribed portion of said control channel resource in said control  
16 channel, wherein control header information that indicates at least a structure of said  
17 control message is not required to be transmitted with said uplink traffic channel  
18 requests; and

19 a utilization apparatus adapted to utilize said received traffic channel request to  
20 determine the true value of said received traffic channel request by subtracting an amount  
21 of traffic channel resource that has been assigned to said mobile unit that is not known to  
22 the mobile unit as being assigned at the time said mobile unit transmitted an uplink traffic  
23 channel request from an amount of said traffic channel resource requested in said  
24 transmitted uplink traffic channel request.

1 Claim 13 (original): The apparatus as defined in claim 12 wherein said wireless  
2 communications base station is for use in an orthogonal frequency division multiplex  
3 multiple access wireless communication system.

1 Claim 14 (original): The apparatus as defined in claim 12 wherein said request  
2 response message includes a traffic channel assignment for said at least one mobile unit.

**Claims 15-17 (cancel).**

1 Claim 18 (currently amended): The apparatus as defined in claim ~~16~~-12 wherein  
2 said true value of said traffic channel request is utilized to generate ~~a~~-an uplink traffic  
3 channel assignment for said at least one mobile unit that transmitted the traffic channel  
4 request.

1 Claim 19 (currently amended): The apparatus as defined in claim 18 wherein said  
2 uplink traffic channel ~~resource~~-assignment is based on the transmission rate of data to be  
3 transported on said assigned traffic channel.

1 Claim 20 (currently amended): The apparatus as defined in claim 18 wherein said  
2 uplink traffic channel ~~resource~~-assignment is based on the number of frames required to  
3 transport data on said assigned traffic channel.

1 Claim 21 (currently amended): Apparatus for use in a wireless mobile  
2 communication system comprising:

3 a plurality of mobile units, wherein each of said mobile units includes

Application Serial No. 09/641,636

4           a ~~generator-formatter~~ for ~~generating-formatting~~ a control channel including a  
5   prescribed control channel resource having one or more time slots, said control channel  
6   being dedicated exclusively to a particular mobile unit and having a prescribed portion of  
7   said control channel resource reserved to transport uplink traffic channel requests,  
8   wherein each mobile unit has a distinct control channel and contention is eliminated on  
9   said uplink; and

10          a transmitter for transmitting said uplink traffic channel requests in said  
11   prescribed portion of said control channel resource to a base station;

12          a receiver to receive a response including an uplink channel assignment from said  
13   base station; and

14          a controller associated with said transmitter to control said transmitting to  
15   periodically repeating transmission of said uplink traffic channel request in prescribed  
16   one or more of said one or more time slots prior to said particular mobile unit receiving a  
17   response from said base station.

18          wherein said particular mobile unit and said base station a priori know the  
19   location of said prescribed portion of said control channel resource in said control  
20   channel,

21          ~~whereby a~~ wherein there is no need to include control header information that  
22   indicates at least a structure of said control message with said uplink traffic channel  
23   requests is eliminated and latency is minimized in transmitting said uplink traffic channel  
24   requests; and

25          a base station including

26          a receiver for monitoring at least one prescribed portion of a control channel  
27   resource of an incoming control channel to detect an incoming uplink traffic channel  
28   request from at least one mobile unit to which said at least one prescribed portion of said  
29   control channel resource is exclusively dedicated, said traffic channel request being  
30   periodically repeatedly transmitted by said at least one mobile unit

31          a detector for determining whether any uplink traffic channel requests have been  
32   received and, when an uplink traffic channel request has been detected, assigning a traffic  
33   channel to said at least one requesting mobile unit, and

Application Serial No. 09/641,636

34 a transmitter responsive to a determination that at least one request has been  
35 received for transmitting a request response message including said traffic channel  
36 assignment to said at least one requesting mobile unit,

37 wherein said at least one mobile unit and said base station a priori know the  
38 location of said prescribed portion of said control channel resource in said control  
39 channel, wherein control header information is not required to be transmitted with said  
40 uplink traffic channel requests, and

41 a utilization apparatus adapted to utilize said received traffic channel request to  
42 determine the true value of said received traffic channel request by subtracting an amount  
43 of traffic channel resource that has been assigned to said mobile unit that is not known to  
44 the mobile unit as being assigned at the time said mobile unit transmitted an uplink traffic  
45 channel request from an amount of said traffic channel resource requested in said  
46 transmitted uplink traffic channel request.

1 Claim 22 (original): The system as defined in claim 21 wherein said wireless  
2 mobile communication system is an orthogonal frequency division multiplex multiple  
3 access wireless mobile communication system.

1 Claim 23 (currently amended): Apparatus for use in a wireless communications  
2 mobile unit comprising:

3 means for ~~generating-formatting~~ a control channel including a prescribed control  
4 channel resource having one or more time slots, said control channel being dedicated  
5 exclusively to a particular mobile unit and having a prescribed portion of said control  
6 channel resource reserved to transport uplink traffic channel requests, wherein each  
7 mobile unit has a distinct control channel and contention is eliminated on said uplink; and

8 means for transmitting said uplink traffic channel requests in said prescribed  
9 portion of said control channel resource to a base station;

10 means for receiving a response including an uplink channel assignment from said  
11 base station; and

12 means for controlling said transmitter to control said transmitting to periodically  
13 repeating transmit said uplink traffic channel request in prescribed one or more of said  
14 one or more time slots prior to said particular mobile unit receiving a response from said  
15 base station.

Application Serial No. 09/641,636

16 wherein said particular mobile unit and said base station a priori know the  
17 location of said prescribed portion of said control channel resource in said control  
18 channel,  
19 ~~whereby a wherein there is no need to include control header information that~~  
20 indicates at least a structure of said control message with said uplink traffic channel  
21 requests is eliminated and latency is minimized in transmitting said uplink traffic channel  
22 requests.

Claims 24 and 25 (cancel).

1 Claim 26 (currently amended): The apparatus as defined in claim 23 wherein said  
2 prescribed portion of said control channel resource includes a plurality of time slots, each  
3 of said time slots including a set of contiguous bit positions.

Claim 27 (cancel).

1 28. (currently amended): Apparatus for use in a wireless communications base  
2 station comprising:

3 receiver means for monitoring at least one prescribed portion of a control channel  
4 resource of an incoming control channel to detect an incoming uplink traffic channel  
5 request from at least one mobile unit to which said at least one prescribed portion of said  
6 control channel resource is exclusively dedicated, said traffic channel request being  
7 periodically repeatedly transmitted by said at least one mobile unit;

8 means for determining whether any uplink traffic channel requests have been  
9 received and, when an uplink traffic channel request has been detected, assigning a traffic  
10 channel to said at least one requesting mobile unit; ~~and~~

11 means responsive to a determination that at least one request has been received  
12 for transmitting a request response message including said traffic channel assignment to  
13 said at least one requesting mobile unit;

14 wherein said at least one mobile unit and said base station a priori know the  
15 location of said prescribed portion of said control channel resource in said control  
16 channel, wherein control header information that indicates at least a structure of said  
17 control message is not required to be transmitted with said uplink traffic channel  
18 requests; and

Application Serial No. 09/641,636

19 means for utilizing said received traffic channel request to determine the true  
20 value of said received traffic channel request by subtracting an amount of traffic channel  
21 resource that has been assigned to said mobile unit that is not known to the mobile unit as  
22 being assigned at the time said mobile unit transmitted an uplink traffic channel request  
23 from an amount of said traffic channel resource requested in said transmitted uplink  
24 traffic channel request.

1 Claim 29 (original): The apparatus as defined in claim 28 wherein said request  
2 response message includes a traffic channel assignment for said at least one mobile unit.

**Claims 30 and 31 (cancel).**

1 32. (currently amended): The apparatus as defined in claim 31-28 wherein said  
2 true value of said traffic channel request is utilized to generate a traffic channel  
3 assignment for said at least one mobile unit that transmitted the traffic channel request.

1 33. (Currently amended): A method for use in a wireless communications mobile  
2 unit comprising the steps of:

3 generating-formatting a control channel including a prescribed control channel  
4 resource having one or more time slots, said control channel being dedicated exclusively  
5 to a particular mobile unit and having a prescribed portion of said control channel  
6 resource reserved to transport uplink traffic channel requests, wherein each mobile unit  
7 has a distinct control channel and contention is eliminated on said uplink; and

8 transmitting said uplink traffic channel requests in said prescribed portion of said  
9 control channel resource to a base station;

10 receiving a response including an uplink channel assignment from said base  
11 station; and

12 controlling said transmitting to periodically repeating transmission of said uplink  
13 traffic channel request in prescribed one or more of said one or more time slots prior to  
14 said particular mobile unit receiving a response from said base station.

15 wherein said particular mobile unit and said base station a priori know the  
16 location of said prescribed portion of said control channel resource in said control  
17 channel,

18 ~~whereby a~~ wherein there is no need to include control header information that  
19 indicates at least a structure of said control message with said uplink traffic channel

Application Serial No. 09/641,636

20 ~~requests is eliminated~~ and latency is minimized in transmitting said uplink traffic channel  
21 requests.

1 Claim 34 (original): The method as defined in claim 33 wherein said method for  
2 use in said wireless communications mobile unit is for use in an orthogonal frequency  
3 division multiplex multiple access wireless communication system.

Claim 35 (cancel).

1 Claim 36 (currently amended): The apparatus as defined in claim ~~35-33~~ wherein  
2 said prescribed portion of said control channel resource includes a plurality of time slots,  
3 and wherein said step of transmitting includes a step of controlling said transmission to  
4 ~~persistently periodically repeatedly~~ transmit said uplink traffic channel request in  
5 prescribed ones of said plurality of time slots prior to ~~said receiver~~ receiving a response  
6 from said base station.

1 Claim 37 (currently amended): The method as defined in claim 33 wherein said  
2 prescribed portion of said control channel resource includes a plurality of time slots, each  
3 of said time slots including a set of contiguous bit positions.

1 Claim 38 (currently amended): The method as defined in claim 37 wherein said  
2 step of transmitting includes a step of persistently transmitting said uplink traffic channel  
3 request in prescribed ones of said plurality of time slots.

1 Claim 39 (currently amended): A method for use in a wireless communications  
2 base station comprising the steps of:

3 monitoring at least one prescribed portion of a control channel resource of an  
4 incoming control channel to detect an incoming uplink traffic channel request from at  
5 least one mobile unit to which said at least one prescribed portion of said control channel  
6 resource is exclusively dedicated, said traffic channel request being periodically  
7 repeatedly transmitted by said at least one mobile unit;

8 determining whether any uplink traffic channel requests have been received and,  
9 if an uplink traffic channel request has been detected, assigning a traffic channel to said at  
10 least one requesting mobile unit; and

11 in response to a determination that at least one request has been received,  
12 transmitting a request response message including said traffic channel assignment to said  
13 at least one requesting mobile unit;



Application Serial No. 09/641,636

14 wherein said at least one mobile unit and said base station a priori know the  
15 location of said prescribed portion of said control channel resource in said control  
16 channel, wherein control header information that indicates at least a structure of said  
17 control message is not required to be transmitted with said uplink traffic channel  
18 requests; and

19 utilizing said received traffic channel request to determine the true value of said  
20 received traffic channel request by subtracting an amount of traffic channel resource that  
21 has been assigned to said mobile unit that is not known to the mobile unit as being  
22 assigned at the time said mobile unit transmitted an uplink traffic channel request from an  
23 amount of said traffic channel resource requested in said transmitted uplink traffic  
24 channel request.

1 Claim 40 (original): The method as defined in claim 39 wherein said wireless  
2 communications base station is for use in an orthogonal frequency division multiplex  
3 multiple access wireless communication system.

1 Claim 41 (original): The method as defined in claim 39 wherein said request  
2 response message includes a traffic channel assignment for said at least one mobile unit.

**Claims 42 and 43 (cancel).**

1 Claim 44 (currently amended): The method as defined in claim 43-39 including a  
2 step of utilizing said true value of said traffic channel request to generate a traffic channel  
3 assignment for said at least one mobile unit that transmitted the traffic channel request.

1 Claim 45 (currently amended): A method for use in a wireless mobile  
2 communication system including a plurality of mobile units and at least one base station  
3 comprising the steps of:

4 in each of said mobile units

5 generating a control channel including a prescribed control channel resource, said  
6 control channel being dedicated exclusively to a particular mobile unit and having a  
7 prescribed portion of said control channel resource reserved to transport uplink traffic  
8 channel requests, wherein each mobile unit has a distinct control channel and contention  
9 is eliminated on said uplink, and

10 transmitting said uplink traffic channel requests in said prescribed portion of said  
11 control channel resource to a base station,

Application Serial No. 09/641,636

12 receiving a response including an uplink channel assignment from said base  
13 station, and

14 controlling said transmitting to periodically repeating transmission of said uplink  
15 traffic channel request in prescribed one or more of said one or more time slots prior to  
16 said particular mobile unit receiving a response from said base station,

17 wherein said particular mobile unit and said base station a priori know the  
18 location of said prescribed portion of said control channel resource in said control  
19 channel,

20 whereby a-wherein there is no need to include control header information that  
21 indicates at least a structure of said control message with said uplink traffic channel  
22 requests is eliminated; and

23 in said at least one base station

24 monitoring at least one prescribed portion of a control channel resource of an  
25 incoming control channel to detect an incoming uplink traffic channel request from at  
26 least one mobile unit to which said at least one prescribed portion of said control channel  
27 resource is exclusively dedicated, said traffic channel request being periodically  
28 repeatedly transmitted by said at least one mobile unit,

29 determining whether any uplink traffic channel requests have been received and,  
30 if an uplink traffic channel request has been detected, assigning a traffic channel to said at  
31 least one requesting mobile unit, and

32 in responsive to a determination that at least one request has been received,  
33 transmitting a request response message including said traffic channel assignment to said  
34 at least one requesting mobile unit,

35 wherein said at least one mobile unit and said base station a priori know the  
36 location of said prescribed portion of said control channel resource in said control  
37 channel, wherein control header information is not required to be transmitted with said  
38 uplink traffic channel requests, and

39 utilizing said received traffic channel request to determine the true value of said  
40 received traffic channel request by subtracting an amount of traffic channel resource that  
41 has been assigned to said mobile unit that is not known to the mobile unit as being  
42 assigned at the time said mobile unit transmitted an uplink traffic channel request from an

Application Serial No. 09/641,636

43 amount of said traffic channel resource requested in said transmitted uplink traffic  
44 channel request.

1 Claim 46 (original): The system as defined in claim 45 wherein said wireless  
2 mobile communication system is an orthogonal frequency division multiplex multiple  
3 access wireless mobile communication system.